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(54) Turbocharging assembly with controllable air-charge compressors for an internal-combustion engine

(57) Air-charge compressors (16, 17) are in permanent driving connection with an exhaust-driven turbine (15) which cannot be cut out during operating periods of the internal-combustion engine. The control of the operating condition (no-load delivery or delivery operation) of each air-charge compressor (16, 17) is effected by a change-over device (20) controlling the pressure connection. To improve the efficiency of the turbocharging assembly (12) the power absorption of whichever air-charge compressor (16, 17) has just been adjusted to no-load delivery is minimised by controlling the fluid mass throughput of (for example) "recirculated" air or turbine exhaust gas (eg. Figs. 3, 4) through that compressor. Devices (29, 30) of the compressors (16, 17) enable the direction of air flow to the rotors to be controlled to impart one of counter-swirl, no-swirl or co-swirl to the air entering the rotor.

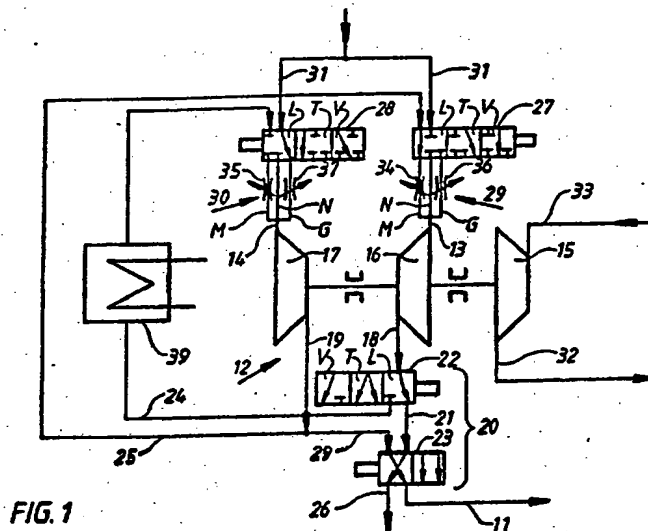


FIG. 1

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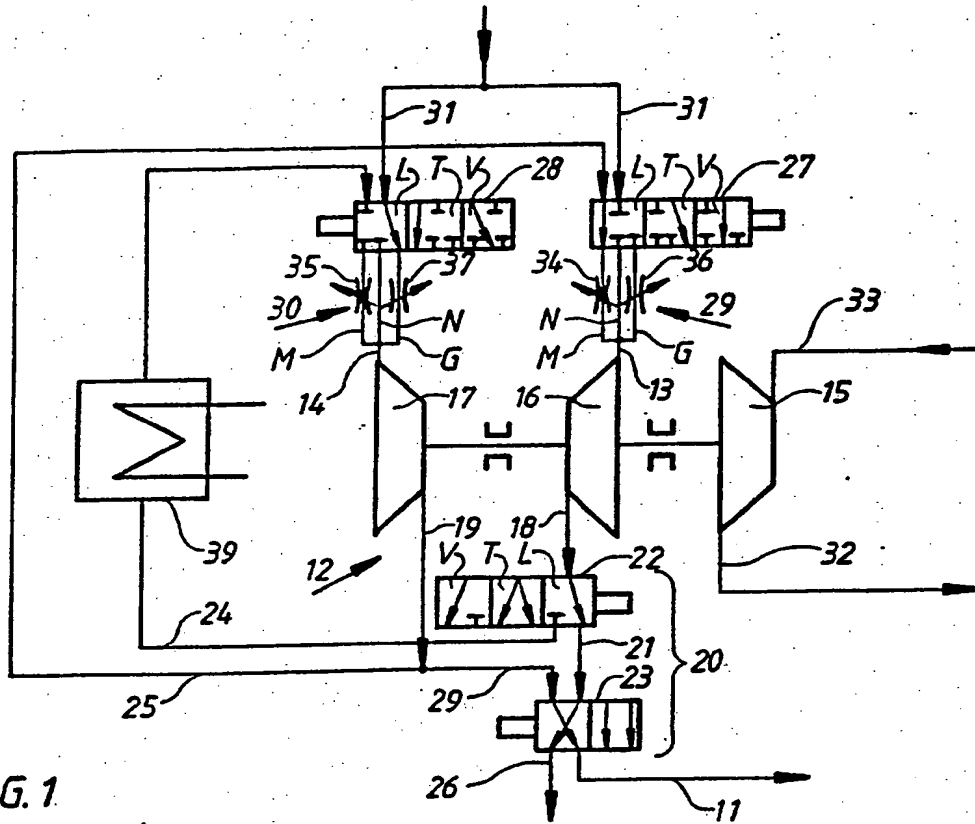


FIG. 1

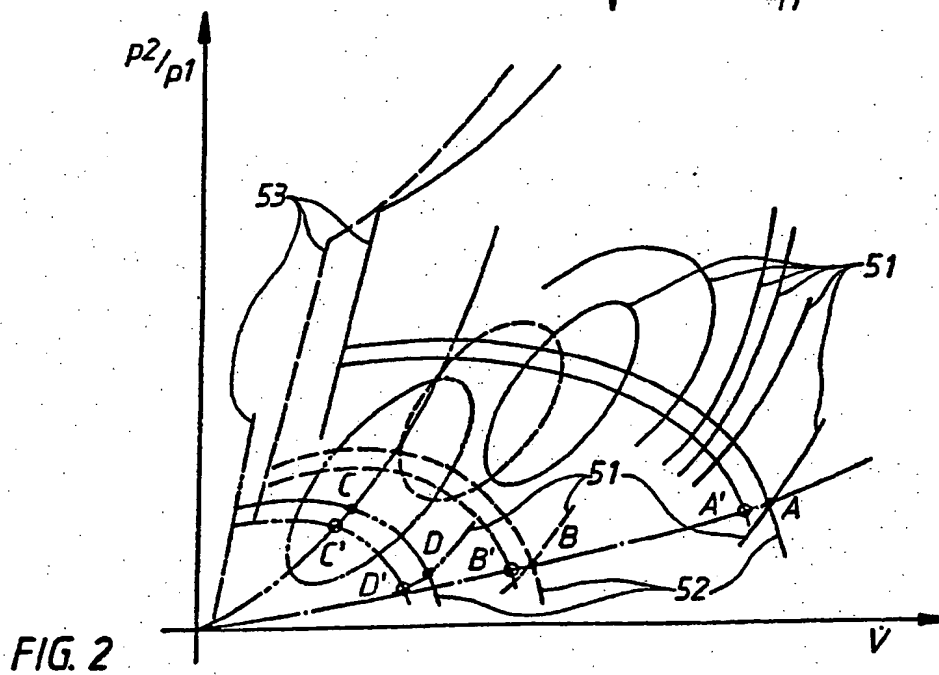


FIG. 2

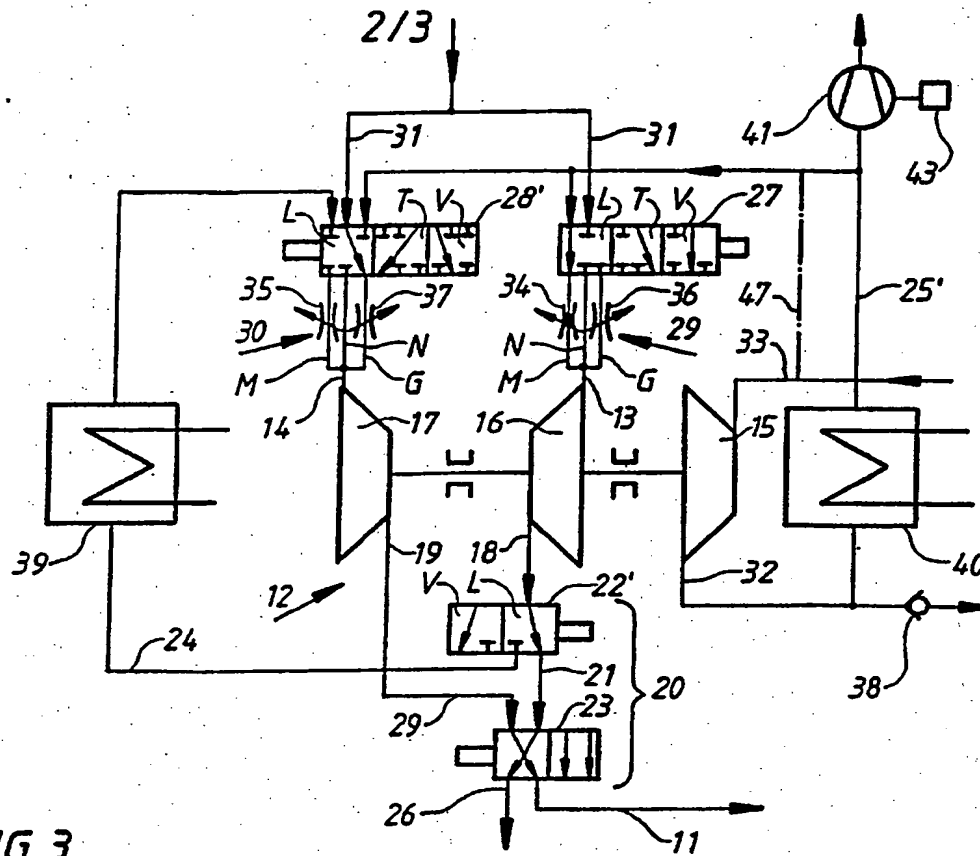


FIG. 3

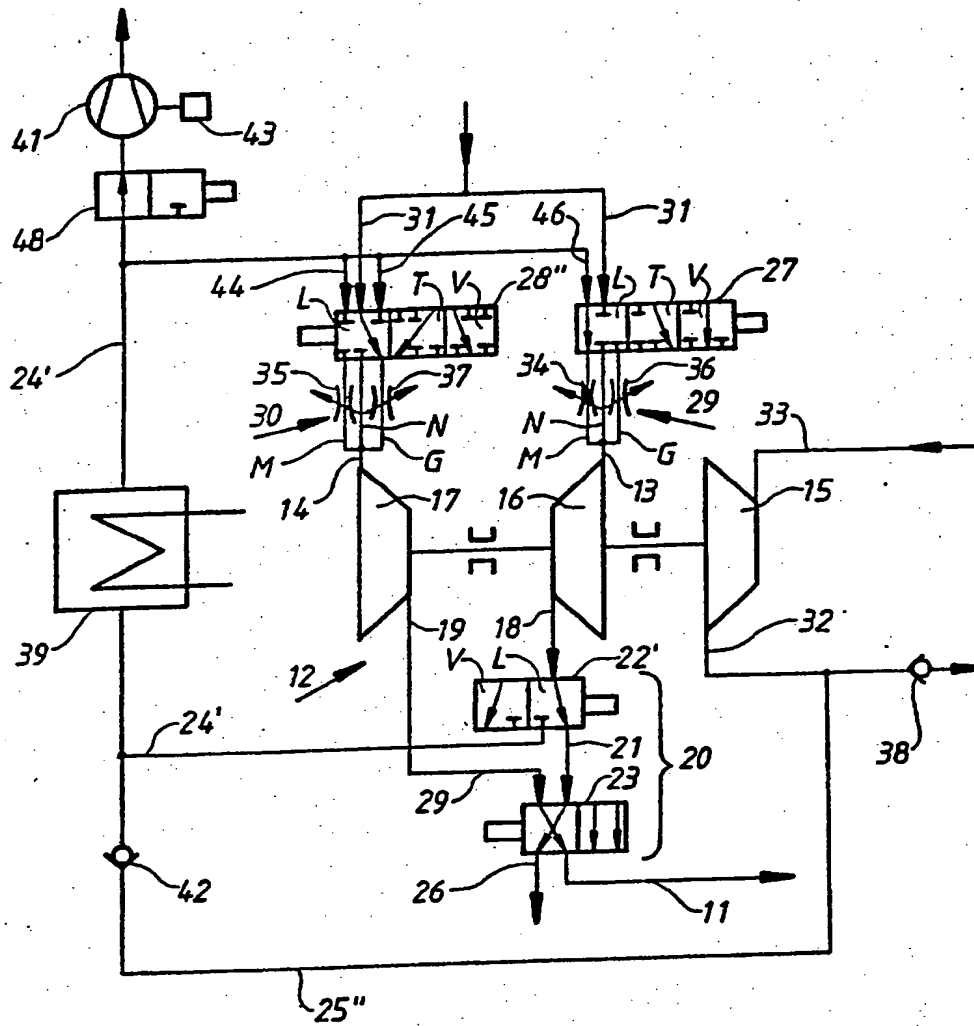


FIG. 4